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A study to assess the effectiveness of progressive mobilization on post operative recovery among the women who has undergone abdominal hysterectomy at government Doon medical college Dehradun Uttarakhand

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Abstract

A true experimental study assessed the effectiveness of progressive mobilization on postoperative recovery in women who underwent abdominal hysterectomy. The study used a pretest-post-test experimental group design with 70 women from a hospital in Dehradun, Uttarakhand, India, selected through simple random sampling. The experimental group received progressive mobilization exercises twice daily for 15-20 minutes over four days. Post-tests were conducted on the fifth postoperative day. Data analysis revealed that the experimental group had significantly better outcomes in constipation (mean = 0.14 vs. 3.1, $p = 0.0001$), wound healing (mean = 1.91 vs. 2.7, $p = 0.008$), and pain (mean = 0.57 vs. 5.2, $p = 0.0001$) compared to the control group. Overall, progressive mobilization significantly improved postoperative recovery in abdominal hysterectomy patients.

Keywords: Progressive mobilization; post-operative recovery; abdominal hysterectomy, social demographic variables, clinical variables

1. Introduction

Hysterectomy is the most common surgery in Gynaecology. Depending on nature of disease and patient's characteristics it is performed via abdominal, vaginal or minimally invasive approach. The fourth National Family Health Survey (NFHS-4) Rate of a hysterectomy varies between the countries ranging from 2.13-3.62/1000 in Germany to 5.4/1000 in United States. Fibroid uterus, abnormal uterine bleeding (AUB), pelvic organ prolapses, and benign ovarian tumours are common indications for hysterectomy ^[1].

Prevalence, socio-demographic determinants, and self-reported reasons for hysterectomy and choice of hospitalization in India, 2015-16 the fourth National Family Health Survey (NFHS-4)—a cross-sectional survey—collected for the first-time direct information on hysterectomy and self-reported reasons for undergoing the procedure among women in the reproductive age group. The current study evaluates the prevalence, determinants, and choice of hospitalization for conducting hysterectomy in India among women aged 15-49 years in 29 states and seven union territories (UTs) based on the new large-scale population-based nationally representative dataset (NFHS 5) ^[2].

Total abdominal hysterectomy were around 12.5% cases developed UTI, wound gaping 5% and blood transfusion 7.5% and similar study by Shanthini showed who reported 5.7% incidence of wound infection in the TAH. Study showed that overall post-operative complications are more in abdominal hysterectomy ^[3].

In India as a whole, 3.3% of women aged 15-49 years had undergone a hysterectomy. The percentage of women who had undergone the procedure was found to vary considerably across the states and the UTs. The southern region stands out for the considerably higher prevalence of hysterectomy; particularly in the states of Andhra Pradesh (8.7%) and Telangana (8.2%), the prevalence was very high followed by Bihar (6%) and Gujrat (4%). On the other hand, the North-eastern region had the lowest prevalence of hysterectomy (1.2%). A noticeable fact that emerged was that many of the hysterectomies were performed in the private sector (69.6%) in India.

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The reasons frequently reported for hysterectomy were excessive menstrual bleeding/pain, followed by fibroids/cysts^[4].

Progressive mobilization is a series of planned movements done in a sequential manner to improve the physical activity. Various exercises like passive range of motion exercises, lateral rotation therapy, active range of motion exercises, and mobilization are done to reduce stiffness and build muscle strength, particularly in the abdomen, arms, and legs. It produces early and quicker recovery and the patients can resume their activities of daily living at the earliest^[5].

2. Materials and Methods

Quantitative Approach with experimental group pre - test and post - test Research design was used in the study. A simple random sampling technique was used to collect data from 70 women undergoing abdominal hysterectomy, based on the inclusive criteria 35 samples in experimental group and 35 samples in control group was selected. The study was conducted in Government Doon Medical College and Hospital Dehradun Uttarakhand. On the first day demographic variables data in both groups were collected using a structured interview method. A pretest was then conducted on the participants to assess the pain, constipation and wound healing. Modified Kendall constipation assessment scale was used for assessing the level of constipation. A modified barber wound healing assessment

scale was used for assessing the level of wound healing. Numeric Pain Rating Scale (NPRS) is used to measure of pain intensity^[6-9]. Patients in experimental group were given progressive mobilization exercise regularly for 15-20 minutes. 4 days after the intervention post-test was performed using the same tool. Data analysis was done by using SPSS version 25 and used both descriptive (mean, percentage, standard deviation) and inferential statistics^[10]. Progressive mobilization is a series of planned movements done in a sequential manner to improve the physical activity. Various exercises like passive range of motion exercises, lateral rotation therapy, active range of motion exercises, and mobilization are done to reduce stiffness and build muscle strength, particularly in the abdomen, arms, and legs. It produces early and quicker recovery and the patients can resume their activities of daily living at the earliest. Figure 1 illustrates the flow of the investigations performed for the study.

2.1 Tools

The tool was developed and standardized from an extensive review of literature and discussion with the experts in the field. The tool consists of three sections.

2.1.1 Section A: sociodemographic variables.

Consists of sociodemographic variables age, religion, marital status, occupation, monthly income, education status, occupation, religion, diet pattern, and residence

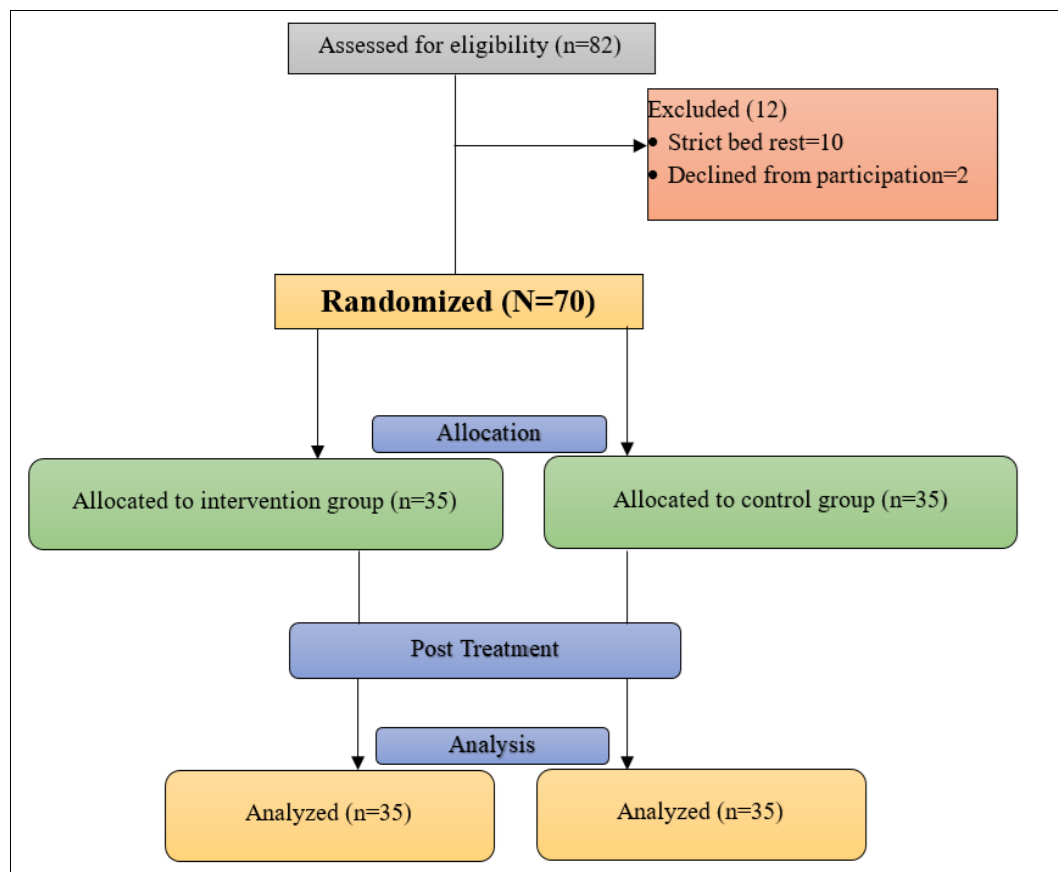


Fig 1: Flowchart for Methodology

2.1.2 Section B: baseline variables.

Consists of clinical variables like weight, parity, type of anesthesia, and indications.

2.1.3 Section C: modified standardized tool of self-constipation assessment scale, wound healing assessment scale, numerical pain scale.

Modified Kendall constipation assessment scale consists of

4 questionnaires; barber wound healing assessment scale consists of 5 questionnaires; Wong-baker numerical pain scale assessment consists of 3 parameters.

2.2 Ethical and legal consideration

This study was conducted after the approval of the ethical committee. All respondents were carefully informed about the purpose of the study, their part during the study, and how privacy was guarded. Ensured confidentiality of the study result. Written permission was obtained from all participants.

3. Results and Discussion

Table 1 presents the frequency and percentage distribution

of pain levels among women who underwent abdominal hysterectomy, comparing pre-test and post-test results between a control group and an experimental group. In the pre-test, the control group had 28.57% of participants experiencing moderate pain and 71.43% experiencing the worst pain, while the experimental group had 34.29% with moderate pain and 65.71% with the worst pain. Post-test results showed significant improvement in the experimental group, with 42.86% reporting no pain, 31.43% moderate pain, and 25.71% the worst pain. In contrast, the control group had 57.14% with moderate pain and 42.86% with the worst pain, indicating that progressive mobilization was effective in reducing pain levels post-operatively.

Table 1: Frequency and percentage of pre-test and post-test level of (pain) progressive mobilization on post-operative recovery among the women who has undergone Abdominal hysterectomy.

Assessment	Group	Numerical Pain Scale					
		No Pain (0)		Moderate Pain (1-5)		Worst Pain (6-10)	
		f	%	f	%	f	%
Pre-Test	Control Group	—	—	10	28.57	25	71.43
	Experimental Group	—	—	12	34.29	23	65.71
Post-Test	Control Group	—	—	20	57.14	15	42.86
	Experimental Group	15	42.86	11	31.43	9	25.71

Table 2 illustrates the frequency and percentage distribution of self-reported constipation levels among women who underwent abdominal hysterectomy, comparing pre-test and post-test results between a control group and an experimental group. In the pre-test, the control group had 11.43% of participants experiencing mild constipation and 88.57% experiencing moderate constipation, while the experimental group had 20.00% with mild constipation and

80.00% with moderate constipation. Post-test results showed significant improvement in the experimental group, with 57.14% reporting no constipation, 28.57% mild constipation, and 14.29% moderate constipation. In contrast, the control group had 42.86% with mild constipation and 57.14% with moderate constipation, indicating that progressive mobilization was effective in reducing constipation levels post-operatively.

Table 2: Frequency and percentage of pre-test and post-test level of (self-constipation) progressive mobilization on post operative recovery among the women who has undergone Abdominal hysterectomy

Assessment	Group	Self-Constipation Scale					
		No Problem (0)		Mild Problem (1-2)		Moderate Problem (3-4)	
		f	%	f	%	f	%
Pre-Test	Control Group	—	—	4	11.43	31	88.57
	Experimental Group	—	—	7	20.00	28	80.00
Post-Test	Control Group	—	—	15	42.86	20	57.14
	Experimental Group	20	57.14	10	28.57	5	14.29

Table 3 shows the frequency and percentage distribution of wound healing levels among women who underwent abdominal hysterectomy, comparing pre-test and post-test results between a control group and an experimental group. In the pre-test, both groups had the majority of participants with poor healing: 94.29% in the control group and 97.14% in the experimental group. Post-test results indicated significant improvement in the experimental group, with

17.14% achieving normal healing, 31.43% good healing, 37.14% average healing, and only 14.29% poor healing. In contrast, the control group showed minimal improvement, with 8.57% achieving good healing, 5.71% average healing, and 94.29% still experiencing poor healing. This suggests that progressive mobilization positively impacted wound healing post-operatively.

Table 3: Frequency and percentage of pre-test and post-test level of (Wound healing) progressive mobilization on post operative recovery among the women who has undergone abdominal hysterectomy

Assessment	Group	Wound Healing Assessment Scale							
		Normal (0)		Good Healing (1-5)		Average Healing (6-10)		Poor Healing (11-15)	
		f	%	f	%	f	%	f	%
Pre-Test	Control Group	—	—	—	—	2	5.71	33	94.29
	Experimental Group	—	—	—	—	1	2.86	34	97.14
Post-Test	Control Group	—	—	3	8.57	2	5.71	33	94.29
	Experimental Group	6	17.14	11	31.43	13	37.14	5	14.29

Effectiveness of progressive mobilization on post operative recovery for Constipation. The experimental group had a significantly lower mean score (0.14) compared to the control group (3.1), with a mean difference of 2.96 ($p = 0.0001$). In Wound Healing experimental group had a lower mean score (1.91) compared to the control group (2.7), with a mean difference of 0.79 ($p = 0.0085$). For Numerical Pain Scale experimental group had a significantly lower mean score (0.57) compared to the control group (5.2), with a mean difference of 4.63 ($p = 0.00012$)

4. Conclusion

Statistical evidence proved that progressive mobilization is an effective intervention to enhance the post-operative recovery which increases the confidence and motivates the women to do their daily activities and functional activities independently during the first day of the post-operative period. Research on post-operative recovery for clients with abdominal hysterectomy faces several limitations. Future research should address several limitations to enhance the understanding and effectiveness of progressive mobilization on post-operative recovery. Increasing the sample size and ensuring greater diversity among participants will improve the generalizability of findings. Additionally, incorporating objective measures alongside subjective assessments can provide a more comprehensive evaluation of recovery. Extending the follow-up periods in studies will help capture long-term recovery outcomes, offering deeper insights into the sustained benefits of progressive mobilization. By addressing these limitations, future studies can contribute to more robust and applicable evidence in post-operative care.

Conflict of Interest

Not available

Financial Support

Not available

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